

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference PU040104		FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/US2004/018764		International filing date (day/month/year) 15.06.2004		Priority date (day/month/year) 16.06.2003
International Patent Classification (IPC) or national classification and IPC H04N7/24, H04N7/50				
Applicant THOMSON LICENSING S.A. et al.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau) a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or Industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 31.03.2005		Date of completion of this report 01.06.2005		
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Schoeyer, M Telephone No. +49 89 2399-2136 		

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2004/018764

Box No. 1 Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-15 as originally filed

Claims, Numbers

1-12 as originally filed

Drawings, Sheets

1/5-5/5 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify):*
 - ☐ any table(s) related to sequence listing *(specify):*
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify):*
 - ☐ any table(s) related to sequence listing *(specify):*

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2004/018764

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-12
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-12
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Re Item V.

- 1 The following documents are referred to in this communication:
D1 : KARCZEWICZ M ET AL: "A Proposal for SP-frames" ITU
TELECOMMUNICATIONS STANDARDIZATION SECTOR VCEG-L27, XX, XX,
9 January 2001 (2001-01-09), pages 1-9, XP002287038;
D2 : HORN U ET AL: "Robust Internet video transmission based on scalable coding
and unequal error protection" SIGNAL PROCESSING. IMAGE
COMMUNICATION, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL,
vol. 15, no. 1-2, September 1999 (1999-09), pages 77-94, XP004180639 ISSN:
0923-5965;

2 INDEPENDENT CLAIM 1

- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not inventive in the sense of Article 33(3) PCT.
Document D1 discloses (see page 1, "Motivation") the provision of compressed video streams to a decoder of different bandwidth and quality.
Also document D1 shows (last paragraph) the switching between (two) bitstreams (normal and channel change streams).
Document D1 does not explicitly show the use at the decoder side of a demultiplexer or a frame store to store reference pictures.
However, the skilled person is well aware of the fact that if a multiple of streams arrive at a decoder they need to be demultiplexed. Furthermore since the streams in D1 also make use of reference pictures the use of frame stores is necessary.
Thus the skilled person will immediately use a demultiplexer and a framestore in order to provide a decoding apparatus that is apply to perform the bitstream switching as shown in D1.

The argument that in D1 only a single stream is sent and not the accompanying switch stream does not render the subject-matter of claim 1 inventive because the skilled person is aware of situations (e.g. layered coding) in which all information is sent to a receiver. The receiver in such a case selects the information which is

needed (demultiplexing). The close similarity between some of the problems of layered coding and stream switching is also illustrated by D2.

Consequently, the subject-matter of claim 1 is rendered obvious by D1.

INDEPENDENT CLAIM 10

The subject-matter of claim 10 relates to a method in accordance with the apparatus of claim 1. Consequently the subject-matter of this claim lacks inventive step for the same reasons as set out above for claim 1.

INDEPENDENT CLAIM 12

The subject-matter of claim 12 relates to a video signal which corresponds to the signal processed by the apparatus of claim 1 or the method of claim 10. Consequently the subject-matter of this claim lacks inventive step for substantially the same reasons as set out above for claim 1.

3 DEPENDENT CLAIMS 2-9, 11

Dependent claims 2-9, 11 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step (Article 33(3) PCT).

- lower resolution pictures (as in claim 2) are known from D1 (see page 2, last paragraph), the upsampling (as in claims 2, 4, 11) is implicitly known from this paragraph since otherwise the transition from one stream to another is not possible.
- postprocessing (as in claims 3, 9, 11) is well known in the art;
- selecting means (as in claim 4) are necessary in order to select one of the two bitstreams in D1;
- redundant syntax decoding (as in claim 7, 11), -common general knowledge;
- channel change pictures (as in claims 8,9, 11) are known from D1 (see figure 2);

In general it is noted that documents D1 and D2 show the transition from one bitstream to another bitstream which represent the same content. The switching can be carried out by using I, SP or both I and SP frames. This technique is used for both

random access as well as fast forward or channel switching since in all cases there is a need to wait for an I frame before the stream of interest can be watched. Obviously by having a second stream which provides I frames at a higher frequency the latency can be reduced.

4 INDUSTRIAL APPLICABILITY

The subject-matter of claims 1-12 is industrially applicable in the field of bitstream switching.

Re Item VII.

1. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1-D2 are not mentioned in the description.